84. The gas microbubbles as claimed in claim 81, wherein said surfactant is in the form of thin films involving one or more molecular layers.

85. The gas microbubbles as claimed in claim 81, wherein said surfactant is in the form of mono- or pluri- molecular membrane layers.

86. The gas microbubbles as claimed in claim 81, wherein said surfactant is a phospholipid.

87. The gas microbubbles as claimed in claim 81, wherein said surfactant comprises at least one phospholipid.

88. The gas microbubbles as claimed in claim 86, wherein said phospholipid is selected from the group consisting of lecithin, phosphatidic acid, phosphatidyl-inositol phosphatidyl-ethanolamine, phosphatidyl-serine, phosphatidyl-glycerol, cardiolipin, sphingomyelins, the plasmogens, and the cerebrosides.

89. The gas microbubbles as claimed in claim 87, wherein said phospholipid is selected from the group consisting of lecithin, phosphatidic acid, phosphatidyl-inositol phosphatidyl-ethanolamine, phosphatidyl-serine, phosphatidyl-glycerol, cardiolipin, sphingomyelins, the plasmogens, and the cerebrosides.

90. Gas microbubbles comprising an amphipatic surfactant and a physiologically acceptable gas comprising an organic compound containing one or more carbon atoms and fluorine wherein the microbubbles comprising the gas are stabilized by the surfactant.

91. The gas microbubbles as claimed in claim 90, wherein said surfactant is film forming.

92. The gas microbubbles as claimed in claim 90, wherein said surfactant is capable of forming stable films in the presence of water and gas.

93. The gas microbubbles as claimed in claim 90, wherein said surfactant is in the form of thin films involving one or more molecular layers.

94. The gas microbubbles as claimed in claim 90, wherein said surfactant is in the form of mono- or pluri- molecular membrane layers.

95. The gas microbubbles as claimed in claim 90, wherein said surfactant is a phospholipid.

96. The gas microbubbles as claimed in claim 90, wherein said surfactant comprises at least one phospholipid.

97. The gas microbubbles as claimed in claim 95, wherein said phospholipid is selected from the group consisting of lecithin, phosphatidic acid, phosphatidyl-inositol phosphatidyl-ethanolamine, phosphatidyl-serine, phosphatidyl-glycerol, cardiolipin, sphingomyelins, the plasmogens, and the cerebrosides.

98. The gas microbubbles as claimed in claim 96, wherein said phospholipid is selected from the group consisting of lecithin, phosphatidic acid, phosphatidyl-inositol phosphatidyl-ethanolamine, phosphatidyl-serine, phosphatidyl-glycerol, cardiolipin, sphingomyelins, the plasmogens, and the cerebrosides.

99. A contrast agent comprising an aqueous suspension of stabilized gas microbubbles, said microbubbles comprising a physiologically acceptable gas comprising an organic compound containing one or more carbon atoms and fluorine, said microbubbles being stabilized in part by mono- or pluri- molecular membrane layers of one or more phospholipids.

100. A process for preparing contrast agent which comprises generating gas microbubbles by entrapping a physiologically acceptable gas comprising an organic compound containing one or more carbon atoms and fluorine with an amphipatic surfactant.

101. A process for preparing contrast agent which comprises generating gas microbubbles comprising a physiologically acceptable gas comprising an organic compound containing one or more carbon atoms and fluorine by stabilizing the microbubble with an amphipatic surfactant.

102. A method of enhancing ultrasound images comprising

administering to a subject a diagnostic ultrasound contrast agent comprising the gas microbubbles of claim 81; and

obtaining an ultrasonic image of said subject.

103. A method of enhancing ultrasound images using an ultrasonic contrast agent, said contrast agent comprising gas microbubbles comprising an amphipatic surfactant and a physiologically acceptable gas comprising an organic compound containing one or more carbon atoms and fluorine wherein the gas is entrapped by the surfactant;

said method comprising administering said contrast agent to a subject;

and obtaining an ultrasonic image of said subject.

104. A method of enhancing ultrasound images using an ultrasonic contrast agent, said contrast agent comprising gas microbubbles comprising a physiologically acceptable gas comprising an organic compound containing one or more carbon atoms and fluorine wherein the gas microbubbles are stabilized by an amphipatic surfactant;

said method comprising administering said contrast agent to a subject;

and obtaining an ultrasonic image of said subject.

105. Gas microbubbles prepared by the process of admixing a liposome solution comprising hydrogenated soya lecithin and dicetylphosphate with a mixture comprising water and a physiologically acceptable gas.

106. Gas microbubbles prepared by the process of

sonicating a solution comprising hydrogenated soya lecithin and dicetylphosphate,

cooling the solution,

adding a viscosity enhancer to the solution,

shaking the solution in the presence of a physiologically acceptable gas at above atmospheric pressure.

107. Gas microbubbles prepared by the process of

immersing glass beads in a solution of dipalmitoylphosphatidylcholine in chloroform,

rotating the beads under reduced pressure to evaporate the chloroform,

rotating the beads under atmospheric pressure with a physiologically acceptable gas,

adding distilled water to the solution, and

removing the beads from the solution.

108. Gas microbubbles prepared by the process of

forming a liposome/maltose solution by adding a liposome solution comprising hydrogenated soya lecithin and dicetylphosphate to a maltose solution in distilled water,

freezing the liposome/maltose solution,

forming lyophilized powder by lyophilizing the liposome/maltose solution under reduced pressure,

restoring pressure to the lyophilized powder with a physiologically acceptable gas,

dissolving the lyophilized powder in water.

109. Gas microbubbles prepared by the process of

forming a mixed solution prepared by mixing a solution of liposome comprising hydrogenated soya lecithin and dicetylphosphate with an aqueous solution of gelatin, human albumin, dextran, and iopamidol,

lyophilizing the mixed solution to form a lyophilized sample,

introducing a physiologically acceptable gas into the lyophilized sample,

mixing the lyophilized sample with water.

110. Gas microbubbles prepared by the process of

forming a mixture by moistening lactose with a solution of chloroform, dimyristoylphosphatidylcholine, cholesterol, dipalmitoylphosphatidic acid,

evaporating the mixture under vacuum to form a powder,

rotating the powder under a physiologically acceptable gas at normal pressure, and

dissolving the powder in water.

111. Gas microbubbles prepared by the process of

sonicating an aqueous solution of hydrogenated soya lecithin and a nonionic polyoxyethylene-polyoxypropylene copolymer surfactant,

cooling the solution,

centrifuging the solution,

forming a mixture by adding the aqueous solution to a maltose solution in water,

freezing the mixture,

evaporating the mixture under reduced pressure,

restoring pressure to the mixture with a physiologically acceptable gas. --